

Listing of Claims:

Claim 1 (Cancel)

Claim 2 (Currently Amended) Apparatus according to Claim 4 7, characterized in that wherein the sample volume is between 0.05 and 30 μ l.

Claim 3 (Currently Amended) Apparatus according to Claim 4 7, characterized in that wherein the channel system contains at least two serial channel sections, each of which is delimited by fluidic connections.

Claim 4 (Currently Amended) Apparatus according to Claim 4 7, characterized in that wherein the channel system contains at least two parallel channel sections which are delimited independently of one another by fluidic connections.

Claim 5 (Currently Amended) Apparatus according to Claim 4 7, characterized in that wherein tightly sealing micropumps serve as fluidic connections.

Claim 6 (Currently Amended) Apparatus according to Claim 4 7, characterized in that wherein micromixers, valves and micropumps serve as fluidic connections.

Claim 7 (New) A miniaturized apparatus for delivering defined sample volumes in the range of 0.01 μ l to 100 μ l, the apparatus comprising:

a channel system with at least one channel section defining said sample volume, the channel section having two ends both of which have at least one fluidic connection to a miniaturized analytical system, for allowing excess fluid to exit the channel section,

said fluid connections selectively closing the channel section enabling filling of the channel section with said sample volume without introducing parts of the sample into other portions of the channel system comprising the miniaturized apparatus.

Claim 8 (New) A miniaturized apparatus for delivering a defined sample volume of fluid in the range of 0.01ml to 100 μ l to a miniaturized analytical system, the apparatus comprising:

a chip having a channel system therein which includes at least one calibrated channel section having a volume in a range of 0.01 μ l to 100 μ l defining a fluid sample volume, the channel having first and second ends;

fluidic micro connections in close proximity with the chips connected in sealing relation to the first and second ends of the at least one calibrated channel section, the fluidic connections selectively opening and closing the calibrated channel section to retain a volume of the fluid sample therein equal to the volume of the at least one calibrated channel section, and

at least one additional channel connected to the calibrated channel section by one of the fluidic connectors for containing a leading or trailing buffer fluid, whereby filling of the calibrated channel section is accomplished for the miniaturized analytic system without introducing portions of the fluid sample into other portions of the channel system, and whereby a precise predetermined volume of fluid is dischargeable from the channel system by isotachophoresis.

Claim 9 (New) The apparatus of claim 8 wherein the volume of the calibrated sample section is in a range of 0.05 μ l to 30 μ l.

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Claim 10 (New) The apparatus of claim 8 wherein there are at least two calibrated channel sections arranged in series and delimited by fluidic micro connections.

Claim 11 (New) The apparatus of claim 8 wherein there are at least two calibrated channel sections arranged in parallel and delimited independently of one another by fluidic micro connections.

Claim 12 (New) The apparatus of claim 8 wherein the fluidic micro connections are configured as valves, micromixers or micropumps.